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REMARKS

Upon entry of the instant amendment, claims 1-5, 7, and 9-13 are pending. Claims 1, 9, and 13 have been amended to more particularly point out Applicants' invention.

Claims 1, 9, and 13 have been rejected under 35 U.S.C. §103 as being anticipated by Dobson et al., U.S. Patent No. 6,377,683 ("Dobson") in view of McNair, U.S. Patent No. 5,504,810 ("McNair"). Applicants respectfully submit that the claimed invention is not taught, suggested, or implied by Dobson or McNair. Either singly or in combination.

As discussed in the Specification, prior echo cancellation system typically do not compensate for multiple far end echo sources. The present invention, however, provides a system and method for determining and compensating for far end echo sources and, in certain embodiments, multiple sources.

Thus, a modem according to one implementation of the present invention includes an echo canceller adapted to determine locations of multiple far end echo sources. A training signal at a predetermined modem training frequency is sent from the modem to the second modem in the link. The return signal is then sampled by the sending modem. Any far end echoes manifest themselves as sine waves at the modem training frequency, delayed in time. The time difference if intervals between the peak of the training signal and the echo signals are timed to determine the echo delay. The echo delay is then used to compensate for the echo when transmissions occur. In certain embodiments, the training signal is a sinusoid transmitted from a local modem to a remote modem.

Thus, claim 1 has been amended to recite "a signal detector adapted to receive a signal, the signal including a data component and a plurality of echo components, said plurality of echo components comprising a plurality of far end echo components, said data component comprising a return signal from a remote modem of a sinusoidal training signal transmitted from the modem;" claim 9 has been amended to recite "receiving a signal at a modem, the signal including a data component received from a

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remote modem and a plurality of far end echo components, the data component comprising a training sinusoid transmitted from the modem to the remote modem;" and claim 13 has been amended to recite "detecting a return signal at the local modem, said return signal comprising said training signal and a plurality of far end echo components."

In contrast, as acknowledged in the Official Action, Dobson does not appear to time intervals between peaks in a return signal component or include a timing unit for such a purpose. Instead, Dobson provides for an echo cancellation scheme at a modem that performs a spectral analysis on an outgoing signal and an incoming signal to determine an echo and a channel response. However, in doing so, Dobson does not time the intervals between peaks.

McNair is relied on for allegedly teaching timing echo peaks for echo cancellation. However, McNair's system has nothing to do with echo cancellation. McNair relates to a fraud detection hardware system 214 that operates outside a signal path and remote from an echo canceller 212. While the fraud detection hardware 214 times echo peaks, nowhere does McNair contain any hint that (a) the peaks can be of a return signal including echo components; (b) that the delays in the peaks are useful for echo cancellation; or (c) that the echo cancellation can be performed at a local modem as a result of the peak delay detection in the return signal, as generally recited in the claims at issue.

This is apparent because McNair has nothing to do with a return signal, as generally recited in the claims at issue. McNair's echo canceller 212 is provided in a transmission path remote from the sending device (telephone 204) and the receiving device (e.g., international gateway switch 202). It is not, however, located at a sending device, such as a modem, as generally recited in the claims at issue. Thus, McNair and Dobson are related to two completely different problems. Even assuming, arguendo, it was possible or desirable to combine the two references, the result would be a system that used Dobson for echo cancellation and McNair for fraud detection.

Because neither Dobson nor McNair relate to transmitting a training signal, such as a sinusoid, or determining echo from peak delays in a received signal, the Examiner

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is respectfully requested to reconsider and withdraw the rejection.

Claims 2-5, 7, and 10-12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Dobson in view of McNair and further in view of Walsh et al., U.S. Patent No. 5,515,398 ("Walsh"). Applicants respectfully submit that the claimed invention is not taught, suggested, or implied by Dobson, McNair or Walsh, either singly or in combination. Dobson and Walsh have been discussed above. McNair is relied on merely for allegedly teaching transmission of a sinusoid at a given frequency. However, like Dobson and McNair, Walsh has nothing to do with timing peaks in a return sinusoid signal. Indeed, Walsh has nothing to do with a return signal or echo cancellation. Walsh provides for sending a "probing signal" from a modem 20 to a modem 16. The probing signal is then measured and analyzed at *modem 16* (see, e.g., col. 5, lines 46-52), not modem 20 (i.e., the sending modem). Thus, like Dobson and McNair, Walsh does not appear to provide for analysis of a return sinusoidal signal, as generally recited in the claims at issue. As such, the Examiner is respectfully requested to reconsider and withdraw the rejection.

For all of the above reasons, Applicants respectfully submit that the application is in condition for allowance, which allowance is earnestly solicited.
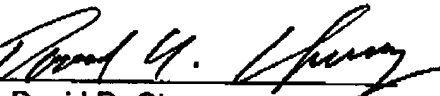
Date: _24 Aug, 05_   Respectfully submitted,

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